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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/820,961	LI, SHAOLIN	
	Examiner	Art Unit	
	Chowdhury M. Shahriar	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04/07/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1,2,3,5-12,23, 24, 27, 31-35,45 and 46**, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*

As to **claim 1**, *Jia* discloses wherein a radio frequency (RF) multi-antenna access point system implemented in a single chip integrated circuit chip (IC) comprising: a baseband processor circuit located in a first portion of the single chip IC for handling data transmissions during a first operating mode in a channel between a first access point and a second access point; a multi-antenna signal processing circuit located in a second portion of the single chip IC for handling data transmissions during a second operating mode in said channel, said multi-antenna signal processing circuit being further adapted to: (a) receive M independent RF modulated input signals from said

second access point; (b) process said M independent RF modulated input signals using a channel mixing matrix to extract N independent data signals transmitted by said second access point; wherein said first operating mode and said second operating mode are automatically selected by the RF multi-antenna access point system based on a transmission condition in said channel.

Jia teaches that in his invention a radio frequency (RF) multi-antenna mobile terminal (read as access point) is implemented (figure 3, column 4, lines 41-50). The present invention teaches that the system comprises multi-antennas, a baseband processor and transmit and receive circuitry, which can be said as multi-antenna processor (figure 3, reference character 34,36,38,40, and column 4, lines 41-50). *Jia* teaches that upon reception of multiple independent signals (for example, M number of signals) at multiple antennas (one at each antenna), it process, demodulate them (figure 5, reference 94, column 7, lines 11-23). *Jia* teaches that the received information is decoded and demodulated base on channel matrix (figure 5, reference 94, column 7, lines 51-65).

Jia disclose transmission and reception scheme of a multi-antenna system that uses channel condition to change the transmission-operating mode. *Jia's* present invention teaches that it adaptively controls coding and modulation techniques for transmission based on available spatial diversity and the quality of the channel or channels used for transmission (abstract, column 2, lines 32-45, column 3, lines 33-50 and column 5, lines 51-54). So it can be said that this invention is capable of selecting operating mode.

Jia does not explicitly disclose transmission scheme of a multi-antenna system that uses a single chip. Walton teaches a MIMO WLAN system whose various processing techniques are possible to implement in a single or multiple application specific integrated circuit (ASICs) (page 49, paragraph 0687). *Jia* and *Walton* are analogous art because they are from same type of technical problem – MIMO wireless system. At the time of invention, it would have been obvious to a person of ordinary skilled in the art to make the above modification. The suggestion/motivation would have been to use integrated circuit or chip to implement signal processors. MPEP 2411.04 Section V(B) discloses that reference can be used to make any invention integrated. Therefore, it would have been obvious to combine *Walton* with *Jia* to address channel information issue.

As to **claim 2**, *Jia* discloses wherein said a RF multi-antenna access point system of claim 1, wherein said multi-antenna signal processing circuit includes an analog to digital converter, and a digital to analog converter for interfacing to an antenna. In his invention, he teaches a digital-to-analog and analog-to-digital converters in transmit and receive circuitry (figure 4,reference 66 and figure 5,reference 76).

As to **claim 3**, *Walton* discloses wherein said a RF multi-antenna access point system of claim 2, wherein said multi-antenna signal processing circuit includes a Fast Fourier Transform (FFT) Circuit. *Walton* teaches FFT/IFFT circuit is available before

multi-antennas to modulate and demodulate OFDM signals (figure 8c, and page 22, paragraph 0256).

As to **claim 5**, *Walton* discloses wherein said a RF multi-antenna access point system of claim 1, wherein said multi-antenna signal processing circuit processes at least 4 separate input signals representing a data stream multiplexed over 4 separate bit streams. *Walton* teaches the multi-antenna signal processing circuit processes at least 4 separate input signal representing a data stream multiplexed over 4 separate bit streams (figure 7, paragraph 0052-0056, each access point is equipped with 4 transmit and receive antennas where MIMO channel is formed by Nt transmit and Nr receive antennas and may be decomposed into Ns channels; paragraph 00459-00492, uplink, or signals received by the access point, spatial processing).

As to **claim 6**, *Jia* discloses wherein said a RF multi-antenna access point system of claim 1, wherein said channel mixing matrix performs an operation that computes a recovered data signal x as follows: x=bl*yl+b2*y2+x0 where bl and b2 are equalization coefficients computed by said multi- antenna signal processing circuit, y.sup.1 and y.sup.2 are received data from separate baseband channels, and x0 is a recovered signal from an adjacent channel. *Jia* teaches that upon reception of multiple independent signals (for example, M number of signals) at multiple antennas (one at each antenna), it process, demodulate them (figure 5, reference 94, column 7, lines 11-

23). *Jia* teaches that the received information is decoded and demodulated base on channel matrix (figure 5, reference 94, column 7, lines 51-65).

As to **claim 7**, *Walton* discloses wherein said a RF multi-antenna access point system of claim 1, wherein space division multiple access is realized by separating different RF signals from different directions simultaneously in the single chip (IC). *Walton* teaches wherein space division multiple access is realized by separating different RF signals from different signal paths simultaneously in the single chip IC (paragraph 0042 and 0053, spatial processing is required at a receiver in order to process multiple data streams on the Ns spatial channels).

As to **claim 8**, *Walton* discloses wherein said a RF multi-antenna access point system of claim 1, wherein said multi-antenna signal processing circuit extends a data transmission range achieved by said baseband processor circuit between said first access point and said second access point. *Walton* teaches a MIMO WLAN system comprising access points and user terminals to provide high instantaneous data rates with greater coverage capabilities than conventional WLAN systems. *Walton* teaches a multi-antenna signal processing circuit (figure 7, paragraph 0210), wherein said multi-antenna processing circuit is operated selectively to enhance an operating transmission range and/or operating data rate of one or more separate baseband processor (figure 7, paragraph 0044, a MIMO WLAN to provide high throughput with greater capabilities).

As to **claim 9**, *Walton* discloses wherein said a RF multi-antenna access point system of claim 1, wherein said multi-antenna signal processing circuit increases a data transmission rate achieved by said baseband processor circuit between said first access point and said second access point. Please look at the response of claim 8.

As to **claim 10**, *Jia* discloses wherein said a RF multi-antenna access point system of claim 1, wherein said multi- antenna signal processing circuit transmits M separate data signals to said second access point (figure 3).

As to **claim 11**, *Walton* discloses wherein said a RF multi-antenna access point system of claim 10, wherein a localized encryption is achieved for said second access point by independently controlling said M separate transmission signals. *Walton* teaches that a localized encryption is achieved by independently controlling an energy modulation of separate transmission antennas used simultaneously by each of said M separate transmission signals (paragraph 0329-0355).

As to **claim 12**, *Walton* discloses wherein said a RF multi-antenna access point system of claim 1, wherein said first access point can be configured during a data transmission to transmit with an energy level which is substantially the same as a noise level to locations other than a localized region where said second access point is located. *Walton* teaches that a localized encryption is achieved by independently controlling an energy modulation of separate transmission antennas used

simultaneously by each of M separate transmission signals so that data signal received by unintended recipients are indistinguishable from noise (paragraph 0329-0355).

As to **claim 23**, *Jia* discloses wherein said a single chip integrated circuit (IC) radio frequency (RF) multi-antenna access point circuit comprising: a baseband processor circuit in the single chip IC for handling data transmissions during a first operating mode in a channel between a first access point and a second access point; a multi-antenna signal processing circuit in the single chip IC for handling data transmissions during a second operating mode in said channel, said multi- antenna signal processing, circuit being further adapted to: (a) receive M independent RF modulated input signals from said second access point; (b) process said M independent RF modulated input signals using a channel mixing matrix to extract N independent data signals transmitted by said second access point; wherein said first operating mode and said second operating mode are automatically selected by the RF multi-antenna access point system based on a transmission condition in said channel; a modulator/demodulator circuit in the single chip IC coupled to an antenna assembly and said multi-antenna signal processing circuit and baseband processor circuit for extracting I/Q data samples from an RF modulated received signal; a media access controller in the single chip IC coupled to said multi-antenna signal processing circuit and baseband processor circuit for interfacing to a host computing System.

Partial response to this claim is covered in response to claim 1 where *Jia* teaches that in his invention a radio frequency (RF) multi-antenna mobile terminal (read as

access point) is implemented (figure 3, column 4, lines 41-50). The present invention teaches that the system comprises multi-antennas, a baseband processor and transmit and receive circuitry, which can be said as multi-antenna processor (figure 3, reference character 34,36,38,40, and column 4, lines 41-50).

Jia teaches that upon reception of multiple independent signals (for example, M number of signals) at multiple antennas (one at each antenna), it process, demodulate them (figure 5, reference 94, column 7, lines 11-23). *Jia* teaches that the received information is decoded and demodulated base on channel matrix (figure 5, reference 94, column 7, lines 51-65). Also note that *Jia* teaches a 'demodulator and modulator' circuit is used in between the antennas and processors (figure 4, reference character 56 and figure 5, reference character 82).

Jia does not explicitly disclose transmission scheme of a multi-antenna system (i.e. MIMO WLAN) that uses a single chip. *Walton* teaches a MIMO WLAN system whose various processing techniques are possible to implement in a single or multiple application specific integrated circuit (ASICs) (page 49, paragraph 0687). *Walton* also teaches MIMO WLAN system comprising access points and user terminals (in this case host computing system) to provide high instantaneous data rates with greater coverage (figure 1). The media access controller is situated between multi-antenna and baseband processor (figure 1, reference character 130). *Jia* and *Walton* are analogous art because they are from same type of technical problem – MIMO wireless system and access point. At the time of invention, it would have been obvious to a person of ordinary skilled in the art to make the above modification. The suggestion/motivation

would have been to use integrated circuit or chip to implement MIMO WLAN signal processors and access point. MPEP 2411.04 Section V(B) discloses that reference can be used to make any invention integrated. Therefore, it would have been obvious to combine *Walton* with *Jia* to address channel information issue.

As to **claim 24**, *Jia* discloses wherein said a system in a integrated circuit chip (IC) comprising: a baseband processor circuit located in a first portion of the IC and capable of handling data transmissions during a first operating mode; and a multi-antenna signal processing circuit located in a second portion of a IC and capable of handling data transmissions during a second operating mode.

Response to this claim is covered in response to claim 1 where *Jia* teaches that in his invention a radio frequency (RF) multi-antenna mobile terminal (read as access point) is implemented (figure 3, column 4, lines 41-50). The present invention teaches that the system comprises multi-antennas, a baseband processor and transmit and receive circuitry, which can be said as multi-antenna processor (figure 3, reference character 34,36,38,40, and column 4, lines 41-50).

Jia disclose transmission and reception scheme of a multi-antenna system that uses channel condition to change the transmission-operating mode. *Jia's* present invention teaches that it adaptively controls coding and modulation techniques for transmission based on available spatial diversity and the quality of the channel or channels used for transmission (abstract, column 2, lines 32-45, column 3, lines 33-50

and column 5, lines 51-54). So it can be said that this invention is capable of selecting operating mode.

Jia does not explicitly disclose transmission scheme of a multi-antenna system that uses a single chip. Walton teaches a MIMO WLAN system whose various processing techniques are possible to implement in a single or multiple application specific integrated circuit (ASICs) (page 49, paragraph 0687). *Jia* and *Walton* are analogous art because they are from same type of technical problem – MIMO wireless system. At the time of invention, it would have been obvious to a person of ordinary skilled in the art to make the above modification. The suggestion/motivation would have been to use integrated circuit or chip to implement signal processors. MPEP 2411.04 Section V(B) discloses that reference can be used to make any invention integrated. Therefore, it would have been obvious to combine *Walton* with *Jia* to address channel information issue.

As to **claim 27**, *Jia* discloses wherein said a system in an IC according to claim 24, wherein the first operating mode or the second operating mode are selected by the multi-antenna access point system based at least on a transmission condition in the channel. *Jia* disclose transmission and reception scheme of a multi-antenna system that uses channel condition to change the transmission-operating mode. *Jia's* present invention teaches that it adaptively controls coding and modulation techniques for transmission based on available spatial diversity and the quality of the channel or channels used for transmission (abstract, column 2, lines 32-45, column 3, lines 33-50

and column 5, lines 51-54). So it can be said that this invention is capable of selecting operating mode.

As to **Claim 31**, please look at the response of claim 5.

As to **Claim 32**, please look at the response of claim 6.

As to **Claim 33**, please look at the response of claim 7.

As to **Claim 34**, please look at the response of claim 8.

As to **Claim 35**, please look at the response of claim 9.

As to **Claim 45**, please look at the response of claim 24.

As to **claim 46**, *Jia* discloses wherein said an IC according to claim 45, further comprising; a modulator/demodulator circuit coupled to an antenna assembly and the multi-antenna signal processing circuit and baseband processor circuit; and a media access controller coupled to the multi-antenna signal processing circuit and baseband processor circuit and capable of interfacing to a host computing system. *Jia* teaches a 'demodulator and modulator' circuit is used in between the antennas and processors (figure 4, reference character 56 and figure 5, reference character 82). *Walton* also

teaches MIMO WLAN system comprising access points and user terminals (in this case host computing system) to provide high instantaneous data rates with greater coverage (figure 1). The media access controller is situated between multi-antenna and baseband processor (figure 1, reference character 130).

3. **Claim 4** rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, as applied to claim 3 above, and further in view of U.S. Patent 5,769,032 *Yarnall et al.*

As to **claim 4**, *Jia* discloses wherein said a RF multi-antenna access point system of claim 3, wherein said multi-antenna signal processing circuit includes a preamble acquisition Circuit for performing a preamble acquisition to align an FFT data frame with an 802.11x based data stream.

Jia teaches a multi-antenna processor, along with that *Yarnall* teaches signal then goes through a preamble acquisition (column 3, lines 30-55). *Jia* does not expressly disclose a signal that goes through a preamble acquisition. *Yarnall* teaches signal then goes through a preamble acquisition (column 3, lines 30-55). *Jia* and *Yarnall* are analogous art because they are from same type of technical problem – signal acquisition. At the time of invention, it would have been obvious to a person of ordinary skilled in the art to make the above modification. The suggestion/motivation would have been to use preamble acquisition technique. Therefore, it would have been obvious to combine *Yarnall* with *Jia* to address channel information issue.

4. **Claims 13,20,21 and 22** rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, and further in view of U.S. Patent 7,126,926 *Bjorklund et al.*

As to **claim 13**, *Jia* teaches an 802.1 lx compatible radio frequency (RF) multi-antenna access point enhancement circuit implemented in a single chip integrated circuit (IC) comprising: a multi- antenna signal processing circuit situated in a first portion of the single chip IC and configured as a first access point adapted to: (a) operate simultaneously with a first baseband processor situated in a second portion of the single chip IC, so that said first baseband processor handles data transmissions in a first mode between said first access point in accordance with an 802.1 lx protocol, and a second access point under a first channel transmission condition, and said multi-antenna signal processor handles data transmissions in a second mode between said first access point and said second access point in accordance with an 802.1 lx protocol under a second, channel transmission condition; (b) receive M independent RF modulated input signals from said second access point when the second channel transmission mode exists between the first access point and said second access point; (c) process said M independent RF modulated input signals using a channel mixing matrix to extract N independent data signals transmitted by said second access point; (d) transmit an RF modulated signal to said second access point using a point coordination function (PCF) mode associated with said 802.1 lx protocol so as to

maintain timing compatibility; wherein said mufti-antenna signal processing circuit operates with a first baseband processor to receive and transmit RF signals in a channel between said first access point and said second access point.

The response of this claim is similar to response of claim 1. Please take a look at the response to claim 1. Also note that there is a single difference between the claims. In claim 13, in access to claim 1, it is claimed that the RF multi-antenna access point is compatible to 802.11x protocol.

Jia does not expressly disclose a signal that follows IEEE standard. *Bjorklund* teaches a multi-tier WLAN system for digital radio communication utilizing a first tier access point with relatively long-range radio connected to a second tier access point with relatively short-range radios to support various applications including the control of hotel door locks, individual room temperature control and remote video monitoring (abstract, figure 1, column 3, line 57 to column 5, line 50). Bjorklund also teaches the wired LAN (690) is connected to any (first tier) access point readily available on the market (column 3, line 66 to column 4, line 12, such as an IEEE 802.11 access point (640) as depicted utilizing wireless link (642) as opposed to a Bluetooth or RadPad protocol wireless link (646, figures 6 and 15, column 18, lines 53-66). *Jia* and *Bjorklund* are analogous art because they are from same type of technical problem – signal processing with IEEE standard. At the time of invention, it would have been obvious to a person of ordinary skilled in the art to make the above modification. The suggestion/motivation would have been to use IEEE standard. Therefore, it would have been obvious to combine *Bjorklund* with *Jia* to address IEEE standard to process signal.

As to **claim 20**, *Walton* teaches wherein said the circuit of claim 13, wherein said multi-antenna signal processing circuit uses a wave beam transmission to communicate selectively to a target in a specific location, and not to other targets. (Previously Presented). *Walton* teaches the radio module transmitter is configured to transmit said RF modulated signals selectively to said separate locations targeted (paragraphs 0057-0059).

As to **claim 21**, *Walton* teaches wherein said the circuit of claim 13, wherein said multi-antenna signal processing circuit is incorporated as part of a closed circuit television monitoring system, and said M independent signals are transmitted by N individual cameras. *Walton* teaches the multi-antenna signal-processing circuit receives and processes video data from N radio module transmitters simultaneously (paragraph 0042), which can be said as N video cameras.

As to **claim 22**, *Walton* teaches wherein said the circuit of claim 13, wherein a receive sensitivity of said first access point can be improved by selectively adding additional multi-antenna signal processing circuit modules for a data transmission, and/or increasing M. *Walton* teaches the beam-steering transmission mode for the uplink is dependent on the number of antennas employed at the user terminal (paragraphs 0057-0059), which can be interpreted as the receive/transmission performance changes with number of antennas.

5. **Claims 14, 15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, as applied to claim 13 above, further in view of U.S. Patent 7,126,926 *Bjorklund et al.* and further in view of U.S. Patent 7,046,651 B2 Terry et al.

As to **claim 14**, *Terry* teaches wherein said the circuit of claim 13 wherein said multi-antenna signal processing circuit processes data using a high rate direct sequence spread spectrum (HR/DSSS) physical layer frame structure that has a preamble and header compatible with said 802.1 lx protocol. *Terry* teaches direct sequence spread spectrum (DSSS) is used in the physical layer data frame and 802.11x is designated protocol (column 1, line 30-45).

As to **claim 15**, *Terry* teaches wherein said the circuit of claim 13, wherein said header includes additional data to identify a high rate mode. *Terry* teaches the physical layer data frame has headers to identify data frame format such as data rate, modulation etc. (figure 5, and column 12, line 20-45).

As to **claim 16**, *Terry* teaches wherein said the circuit of claim 13, wherein said header includes additional data to identify a modulation format. *Terry* teaches the physical layer data frame has headers to identify data frame format such as data rate, modulation etc. (figure 5, and column 12, line 20-45).

Jia does not expressly disclose a signal that goes through a preamble acquisition that has header frame based on 802.11x standard. *Terry* teaches signal then goes through a preamble acquisition, has frame header etc. *Jia* and *Terry* are analogous art because they are from same type of technical problem – signal acquisition. At the time of invention, it would have been obvious to a person of ordinary skilled in the art to make the above modification. The suggestion/motivation would have been to use preamble acquisition technique. Therefore, it would have been obvious to combine *Terry* with *Jia* to address frame header issue.

6. **Claim 17** rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, as applied to claim 13 above, further in view of U.S. Patent 7,126,926 *Bjorklund et al.* and further in view of *U.S Patent* 5,457,808 *Osawa et al.*

As to **claim 17**, Jia teaches wherein said the circuit of claim 13, wherein said first baseband processor sends multicast transmissions to a first set of targets within a first range of said first access point, and said multi-antenna signal processing circuit sends multicast transmissions to a second set of targets within a second range of said first access point. *Jia* teaches a multi-antenna processor, along with that *Osawa* teaches multicast communication transmission between two points (column 2, lines 12 –20). *Jia* does not expressly disclose multicast communication transmission. *Osawa* teaches multicast communication transmission between two points (column 2, lines 12 –20). *Jia*

and *Osawa* are analogous art because they are from same type of technical problem – multicasting. At the time of invention, it would have been obvious to a person of ordinary skilled in the art to make the above modification. The suggestion/motivation would have been to use multicasting. Therefore, it would have been obvious to combine *Osawa* with *Jia* to address multicasting issue.

7. **Claims 18 and 19** rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, as applied to claim 13 above, further in view of U.S. Patent 7,126,926 *Bjorklund et al.*

As to **claim 18**, please take a look at the response of the claim 13.

As to **claim 19**, *Walton* teaches the multi-antenna signal processing circuit is enabled and selectively operates in said second mode when channel conditions indicated that a data rate in said channel has fallen below a predetermined threshold (paragraphs 0658-0667). That means when the predetermined ratio is hampered the change between accesses periods occur.

8. **Claims 28 and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, as applied to claim 24 above.

As to **claim 28**, please look at the response of claim 2.

As to **claim 29**, please look at the response of claim 3.

9. **Claim 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, as applied to claim 24 above, and further in view of U.S. Patent 5,769,032 *Yarnall et al.*

As to **claim 30**, please look at the response of claim 4.

10. **Claims 25,26, 36-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,103,325 B1 *Jia et al.* in view of U.S. PG Pub. 2004/0082356 A1 to *Walton et al.*, as applied to claim 24 above, and further in view of U.S. Patent 7,126,926 *Bjorklund et al.*

As to **claims 25 and 26**, *Walton* teaches a first data monitoring and capturing circuit capable of receiving data from a first location (figures 1 and 7, paragraphs 0040-0042, AP (110x) receiving data from terminal users (120x)), A transmitter to transmit the data to a second location (figure 1 and 7, user terminals (120x)), A first data receiving circuit at the second location for receiving the data (figures 1 and 7, paragraphs 0040-0042 and 0218, AP (110x) comprising demodulators (722) and RX spatial processor (740)), A multi-antenna signal processing circuit capable of: Receiving M independent

modulated signals representing the data (paragraph 0053, a MIMO channel is formed by the Nt transmit antennas and Nr receive antennas and decomposed into Ns spatial channels), Processing the M independent modulated signals using a channel mixing matrix to extract the data (figure 7, paragraphs 0459-0492, RX spatial processor (740)). *Walton* teaches a MIMO WLAN system comprising access points and user terminals to provide high instantaneous data rates with greater coverage capabilities than conventional WLAN systems, figure 1, but is silent as to the data stream represents captured and stored video from N separate radio module transmitters.

Bjorklund teaches a multi-tier WLAN system for digital radio communication comprising a wired LAN coupled to a host (112) for data control and storage and at least one first tier access point with a relatively long-range wireless radio, figures 1 and 6. *Bjorklund* further teaches the first tier access radio is wirelessly or wired to a second tier access point with relatively short-range wireless radios to support various applications including the control of hotel door locks, individual room temperature control and remote video monitoring (abstract, figure 1, column 3, line 57 to column 5, line 50).

As to **claim 36**, please look at the response of claim 10.

As to **claim 37**, please look at the response of claim 11.

As to **claim 38**, please look at the response of claim 12.

As to **claim 39**, please look at the response of claim 13.

As to **claim 40**, please look at the response of claim 13.

As to **claim 41**, please look at the response of claim 13.

As to **claim 42**, please look at the response of claim 13.

As to **claim 43**, please look at the response of claim 13.

As to **claim 44**, please look at the response of claim 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chowdhury M. Shahriar whose telephone number is 571-270-3318. The examiner can normally be reached on Mon-Fri 8 AM:4 PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on 571-272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Chowdhury Shahriar

Patent Examiner

Art Unit 2609

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8/14/07

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